TITLE OF THE INVENTION
APPARATUS FOR TRANSPORTING A CONTAINER

BACKGROUND OF THE INVENTION

TECHNICAL FIELD OF THE INVENTION

This invention relates generally to mechanical support structures and more particularly to mechanical support structures for use in transporting contains.

DESCRIPTION OF RELATED ART

As is known, a multitude of items are transported from location to another during the normal course of business. The change of locations may be from one area of a building to another, a delivery from a commercial building to a customer, across the country, etc. The items may range from organic items such as flowers, fruits, vegetables, etc. to inorganic items such as electronic equipment, hardware, tools, etc.

From a financial standpoint, the transportation of items must be done reliably (e.g., the items should not get damaged in transit) and efficiently (e.g., the loading and unloading of the items from the transporting device is easy, safe, and quick and the amount of items that can be transported is maximized). For example, if the items being transported are flowers, which usually are contained in a glass vase, or some other fragile material, they should be securely head in the transporting device (e.g., a delivery van) such that they can be safely delivered. Currently, most flower delivery vans use cardboard boxes, or some other type of box, to hold the vases of flowers. If the van is not driven with the utmost care, the boxes will shift in the van. If the shifting is sudden, the vases may break. Further, the use of boxes is not an optimal storage device for the vases of flowers, thus the van is not optimally loaded, which requires additional trips to reload the truck. Such inefficiencies are costly in a highly competitive marketplace.

Therefore, a need exists for an apparatus for efficient and reliable transportation of items such as, but not limited to, flowers, catering items, painting supplies, and any type of container.

BRIEF SUMMARY OF THE INVENTION

The apparatus for transporting a container of the present invention substantially meets these needs and others. In one embodiment, an apparatus for transporting a container, the apparatus includes a base, a retaining section, and a brace. The base has a first geometric shape in a first plane to support the container, where the container may be a vase of flowers, a paint can, catering supplies, etc. The retaining section has a second geometric shape in a second plane to retain the container on the base. The brace mechanically couples the base to the retaining section. Such an apparatus may be mounted on transporting device (e.g., a vehicle, a dolly, etc.) to securely transport multiple items efficiently and reliably. The items may be fragile containers, such as a vase, non-fragile containers such as a paint can, and/or any other article that requires transporting.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

Figure 1 is a mechanical diagram of an apparatus for transporting a container in accordance with the present invention;

Figure 2 is a side view of the apparatus for transporting a container of Figure 1;

Figure 3 is a mechanical diagram of a retaining section of an apparatus for transporting a container in accordance with the present invention;

Figure 4 is a mechanical diagram of a container transporting system in accordance with the present invention;

Figure 4B is a mechanical diagram of an alternate container transporting system in accordance with the present invention;

Figures 5A and 5B are mechanical diagrams of a primary support of the container transporting system in accordance with the present invention;

Figures 6A and 6B are mechanical diagrams of a support channel of the container transporting system in accordance with the present invention;

Figures 7A and 7B are mechanical diagrams of another primary support of the container transporting system in accordance with the present invention; and

Figure 8 is a mechanical diagram of a multiple container transporting apparatus in accordance with the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Figure 1 is a mechanical diagram of container transporting apparatus 10 that includes a base 12, a retaining section 14 and a brace 16 for holding a container 18. The base 12, the retaining section 14, and the brace 16 may be constructed of the same material or different materials. Such materials include, but are not limited to, aluminum, plastic, fiberglass, wood, elastics, cloth, composites, and/or combinations thereof. The container 18 may be any type of item including, but not limited to, a vase, a paint can, a cup, a box, a jar, a bucket, a barrel, and tubing.

As shown, the base 12 has a geometric shape that supports the container 18. The shape may be circular, square, rectangular, oval, or triangular. In a preferred embodiment, the geometric shape of the based 12 corresponds to the axial (i.e., the bottom view) of the container 18. Thus, if the container 18 is round, the base 12 is round.

The retaining section 14 holds the container 18 in a relatively fixed position with respect to the base 12. The shape of the retaining section 14 corresponds to the shape of the container 18. As shown, the container 18 is a cylinder and the retaining section 14,

from a top perspective, is round. The retaining section 14 will be described in greater detail with reference to Figure 3.

The brace 16 mechanically couples the base 12 to the retaining section 14. The mechanical coupling may be fixed by welding, glue, rivets, hardware, etc., between the brace 16 and the base 12 and between the brace and retaining section 14. Alternatively, the mechanical coupling may be adjustable. For example, the brace 16 may include a slot such that the mechanical coupling of the retaining section 14 to the brace 16 may be vertically adjusted. Thus, if the height of the container 18 changes, the retaining section 14 coupling to the brace 16 may be adjusted to position the retaining section 14 at an optimal position. Such adjustability allows the apparatus 10 to securely transport a variety of containers.

The container 18 may be the item in transport (e.g., a paint can, ladder, etc.) or the receptacle for the item in transport (e.g., flowers, baked goods, etc.). Alternatively, the container 18 may be a flexible sleeve for receiving and holding an item for transport.

Figure 2 is a side view of the apparatus 10 that includes the base 12, the retaining section 14, and the brace 16. The base 12 is shown to include a neck 22 and a stand 24. The stand 24 provides the platform on which the container 18 sits. The neck 22 provides the mechanical connection between the stand 24 and the brace 16. As one of average skill in the art will appreciate, the neck 22 may be adjustable to enable the position of the stand 24 to be adjusted in the first plane with respect to the brace 16.

The brace 16 is shown to include an adjustable mechanism 20, which may be slot. The adjustable mechanism 20 enables the retaining section 14 to be adjusted in the second plane to better hold the container 18.

Figure 3 is a mechanical diagram of an embodiment of the retaining section 14 that includes a first section 30, a second section 32, and a tension mechanism 34. The first and second sections 30 and 32 may be constructed of the same material or different

materials. Such materials include, but are not limited to, aluminum, plastic, fiberglass, wood, elastics, cloth, composites, and/or combinations thereof.

As shown, the first and second sections 30 and 32 have shapes that correspond to the shape of the container 18. For instance, if the container is a cylinder, the first and second sections have a semi-circular shape. If the container is box-like, the first and second sections have a square and/or rectangular shape. As is also shown, the first and second sections 30 and 32 include flanges to connect to the tension mechanism 34, which may be a screw, a rubber band, a spring, and/or any other device that can provide tension between the first and second section 30 and 32 to hold the container 18.

The first and/or second section 30 and/or 32 may include padding on this inside surface to provide cushioning of the container as it is held in place. As one of average skill in the art will appreciate, there is a variety of ways in which the retaining section 14 may be implemented to hold the container 18. For instance, the second section 32 and the tension mechanism 34 may be replaced with an elastic strap coupled to the first section 30, which is mounted to the brace. Further, the first and second sections may be hinged together on one side with a clasp on the other.

Figure 4 is a mechanical diagram of a container transporting system 40 that includes a support structure 42 and a plurality of container transporting apparatus 10. The support structure 42 includes at least one support channel and at least one primary support. In the embodiment of Figure 4, two support channels 48 and two primary supports 44 and 46 are illustrated.

In application, the support channels 48 are mechanically coupled to a transporting device (e.g., the inside wall of a van, a dolly, any type of vehicle, etc.). The supporting structure 42, which will be described in greater detail with reference to Figures 6A and 6B, may include a sliding mechanism such that the plurality of container transporting apparatus 10 may be slide out for easy loading and then slide back into place of efficient and reliable transportation.

The primary supports 44 and 46, which will be described in greater detail with reference to Figures 5A, 5B, 7A, and 7B, mount to the support channels 48 and provide a mechanical coupling to support the container transport apparatus 10.

Figure 4B is a mechanical diagram of a support panel that may be used as the backplane for the container transporting system. In comparison to Figure 4, the support panel of Figure 4B would replace the primary supports 46 and 48 and the support channels 42 and 49. As such, the container transporting apparatus 10 would attach to the support panel, which, in turn, is mounted to the transporting device.

Figures 5A and 5B are mechanical diagrams of a primary support 44 and/or 46 of the container transporting system 40. The primary support may be constructed of any material, where each primary support may be constructed of the same material or a different material. Such materials include, but are not limited to, aluminum, plastic, fiberglass, wood, elastics, cloth, composites, and/or combinations thereof. As shown in Figure 5A, the primary support 44 or 46 includes a square tubular structure with raised receptacles. The raised receptacles are spaced such that they may be slid on to the support channels and then secured thereto. Figure 5B illustrates a top and side view of the primary support 44 or 46.

Figures 6A and 6B are mechanical diagrams of a support channel 48 of the container transporting system 40. The support channel 48 may be constructed of any material, where each primary support may be constructed of the same material or a different material. Such materials include, but are not limited to, aluminum, plastic, fiberglass, wood, elastics, cloth, composites, and/or combinations thereof. As shown in Figure 6A, the support channel 48 includes a C-shaped structure with flanges. The flanges provide the tracking for the raised receptacles of the primary channel 44 or 46. Figure 6B illustrates a top and side view of the support channel 48.

Figures 7A and 7B are mechanical diagrams of another primary support 44 and/or 46 of the container transporting system 40. The primary support may be constructed of any material, where each primary support may be constructed of the same material or a different material. Such materials include, but are not limited to, aluminum, plastic, fiberglass, wood, elastics, cloth, composites, and/or combinations thereof. As shown in Figure 5A, the primary support 44 or 46 includes a square tubular structure with mounting holes, which are used to mount the primary channels to the support channels. Figure 7B illustrates a top and side view of the primary support 44 or 46.

Figure 8 is a mechanical diagram of a multiple container transporting apparatus 60 that includes a base 12, the retaining section 14, and the brace 16 (not shown). The retaining section 14 is of geometric shape to hold a multiple container receptacle 62. The multiple container receptacle 62 may be constructed of any material and includes a plurality of receptacles 64. Each receptacle may store a container for secure transporting. The multiple container transporting apparatus may be mounted in the system 40 of Figure 40.

The preceding discussion has presented a container transporting apparatus and system incorporating such an apparatus. Such an apparatus enables efficient and reliable transportation of a variety of items including vases of flowers, baked goods, catering supplies, etc. As one of average skill in the art will appreciate, other embodiments may be derived from the teachings of the present invention without deviating from the scope of the claims.